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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,146	08/22/2003	Saul Griffith	056754/0124946	8716
26242	7590	09/11/2007		
NORMA E HENDERSON HENDERSON PATENT LAW 13 JEFFERSON DR LONDONDERRY, NH 03053			EXAMINER LAM, CATHY FONG FONG	
			ART UNIT 1775	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/646,146

Applicant(s)

GRIFFITH ET AL.

Examiner

Cathy Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

In view of the amendment and remarks filed on June 12, 2007, the pending claims continue to be unpatentable as following:

***Claim Rejections - 35 USC § 112***

1. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The newly added phrase "*persistent insulating region*" is not clearly described in the specification. Applicant is required to use wordings that are clear and precise and derive from the specification.

***Claim Rejections - 35 USC § 102***

2. Claims 23-26 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Notenboom et al (WO 97/38810).

Notenboom discloses a sintered structure on a substrate. Notenboom's product is particularly useful for forming multilayer electronic components (page 2 bottom thru page 3 top).

The sintered structure is formed from a metal paste which comprised of metal particles in the form of sol-gel solution or colloidal solution. The metal particles are in aqueous and/or organic matrix (page 6 Example 2). Here the examiner is taking the position that the aqueous and organic matrix are the hydrocarbon capping groups. The metal particles having an average particle size between 10 to 100 nm (page 3 L 28-29). The substrate can be a dielectric layer (page L 17).

After the metal paste is deposited over the substrate, the substrate is locally heated with laser irradiated upon the metal paste only and to evaporate the liquid and to sinter the metal particles (page 2 L 25-28 & page 5 L 25-26).

3. Claims 23-26 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by watanabe et al (US 5587111).

Watanabe discloses an electrical device comprised of a metal paste. The metal paste is comprised of fine metal particles having average particle size of less than 1000 Å (or 100 nm), preferably the particle size is from about 10 Å to about 100 Å (i.e. 1-10 nm) (col 4 L 50-52).

The fine metal particles are mixed with an organic solvent and surface active agent (col 4 L 37-42). The solvents are hydrocarbons (col 4 L 5-15).

The metal paste is formed onto an alumina substrate, and then sintered to give a **wiring pattern** (col 6 L 14-17). The sintering step can be done by laser (col 10 L 47-55). The examiner is taking the position that the organic solvents are the claimed capping groups.

Watanabe's metal paste is used for forming a wiring pattern, it is the well known in the art that a wiring pattern is formed on the surface of an insulating substrate (col 6 L 14-17).

#### ***Response to Arguments***

4. Applicant's arguments filed on June 12, 2007 have been fully considered but they are not persuasive. Applicant in the remarks raises the following issues:

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A. Both Notenboom and Watanabe do not teach an at least partially surrounding persistent insulating region surrounding the conductive pattern.

In respond to the above issues:

A. Notenboom teaches the substrate is locally heated, the location is where the conductive colloidal solution is provided (page 5 L 25-26).

Watanabe's metal paste is used for forming wiring pattern on an insulating substrate.

Although the prior art do not specifically state having persistent insulating region surrounding the conductive pattern, it is well understood that the conductive colloidal solution (or sol-gel solution) and the metal paste are formed in a pattern on an insulating substrate, NOT a conductive film over the whole surface of the insulating substrate.

Therefore, the examiner continue to rely on the prior art references, and the art rejections sustained.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538.

The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
August 30, 2007